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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/619,388 | 07/19/2000 | Muh-Wang Liang | LIE 105 | 2244 |
| 23995 | 7590 | 06/23/2004 | EXAMINER | |
| RABIN & Berdo, PC 1101 14TH STREET, NW SUITE 500 WASHINGTON, DC 20005 | | | KEENAN, JAMES W | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 3652 | |
| DATE MAILED: 06/23/2004 | | | | |

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/619,388

Applicant(s)

LIANG ET AL.

Examiner

James Keenan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 July 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

1. The disclosure is objected to because of the following informalities: page 4, line 4, reference numeral "19" should be --10--.

Appropriate correction is required.

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1, line 1, "the fabrication equipment" lacks antecedent basis;

line 2, "especially an apparatus ..." represents an improper narrow limitation following a broad limitation in the same claim;

line 2, "improved" is vague;

and lines 7-8, "the top ends" and "the bottom ends" lack antecedent basis.

Claim 3, line 5, "the openings of said ... covers" lacks antecedent basis.

Claim 7, "the unguided side" and "the pitch error" lack antecedent basis.

Claim 9, "sticking to said timing pulleys" is not understood.

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

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invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bonora et al (US 6,135,698) in view of Bonora et al (US 5,931,631), hereinafter referred to as Bonora A and B, respectively.

Bonora A shows in the figures 2, 8, and 9 embodiment an apparatus for transferring wafers in a pod to and from fabrication equipment, including port plate 102, base 106, frame 108 having two port plate supporters and a lead screw 120, port door 104 connected to the lead screw via arm 152, bracket 130, and carriage 128 (guide nut), and a lifting/lowering drive mechanism comprising motor 114, pulleys 118, 122, and belt 124 which drives the lead screw and moves the port door up and down through its connection with the guide nut 128.

Bonora A does not show the door to include two guide nuts installed on opposite sides thereof cooperating with two lead screws.

Bonora B shows a similar apparatus for use in the same environment wherein two lead screws 120 are used to vertically translate a port plate through their connection with support members 118 which act as guide nuts on opposite sides of the plate. Bonora B discloses that the use of two lead screws is an alternative to using only one screw (col. 6, lines 2-9). Although Bonora B moves the port plate rather than the port door, Bonora A discloses that the drive system may be used for either the plate or the door, with the other component remaining stationary.

It would have been obvious for one of ordinary skill in the art at the time of the invention to have modified the apparatus of Bonora A by utilizing two lead screws

cooperating with guide nuts on opposite sides of the port door, as suggested by Bonora B, as this would simply be the use of an alternate equivalent drive means in the same environment.

Although Bonora B does not show details of the drive system, one of ordinary skill would recognize the obviousness of modifying the drive system of Bonora A with appropriate timing belts and pulleys so as to drive both lead screws with a single motor.

6. Claims 1-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bonora B in view of Bonora A.

As noted above, Bonora B moves the port plate rather than the door, whereas Bonora A discloses that the device can be used to move either the plate or the door.


It would have been obvious for one of ordinary skill in the art at the time of the invention to have modified Bonora B such that the lead screws moved the port door rather than the plate, as Bonora A explicitly teaches that a drive system comprising a lead screw may be used for either purpose in the same environment. Similarly, it would have been obvious to have utilized a system of timing belts and pulleys to drive the lead screws, as suggested by Bonora A.

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to James Keenan whose telephone number is 703-308-2559. The examiner can normally be reached on Monday through Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eileen Lillis can be reached on 703-308-3248. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


James Keenan
Primary Examiner
Art Unit 3652

jwk
6/16/04